

FACT SHEET FOR NPDES PERMIT WA0022349
CITY OF SEQUIM WATER RECLAMATION PLANT

SUMMARY

This National Pollutant Discharge Elimination System (NPDES), State Waste Discharge, and Reclaimed Water Permit and Fact Sheet covers all of the discharges and reuse options for the Sequim Water Reclamation Plant. The plant produces Class A reclaimed water that is reused at various locations around the City. Among other uses, the reclaimed water is used to augment flows in Bell Creek (Outfall 002). Some water that is not reused is still discharged to the Strait of Juan de Fuca (Outfall 001).

The Sequim plant produces a very high quality of treated water and has a very good compliance history, including winning a number of compliance awards for perfect compliance for a calendar year.

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES) of permits, which is administered by the Environmental Protection Agency (EPA). The EPA has authorized the state of Washington to administer the NPDES permit program. Chapter 90.48 Revised Code of Washington (RCW) defines the Department of Ecology's (Department) authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the state include procedures for issuing permits [Chapter 173-220 Washington Administrative Code (WAC)], technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

<u>GENERAL INFORMATION</u>	
Applicant	City of Sequim 152 West Cedar Street Sequim, Washington 98382
Facility Name and Address	City of Sequim Class A Water Reclamation Plant 247 Schmuck Road Sequim, Washington 98382
Type of Treatment	Class A Water Reclamation
Discharge Location	Strait of Juan de Fuca (Outfall 001) Latitude: 48° 5' 29" N Longitude: 123° 2' 11" W. Bell Creek (Outfall 002) Latitude: 48° 4' 49" N Longitude: 123° 5' 3" W.
Water Body ID No.	New: 1224026474620 Old: WA-18-0010

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

The current treatment facility was constructed as a secondary treatment facility in 1966 and was significantly modified and expanded in 1983. Most of the original facility was abandoned or converted to other uses, and some of the current facility was constructed at that time. The facility was designed for an average flow of 0.65 MGD and a peak flow of 3.0 MGD. There were improvements constructed in 1993 consisting of additional aeration in the oxidations ditch, a new secondary clarifier, sludge pumping improvements, improved scum removal, and dechlorination. In 1997 an upgrade to the facility was begun in order to produce class A reclaimed water. The upgrade included flow equalization basin, filtration, ultraviolet (UV) disinfection, and a retention pond. The design of the Class A facility is for a maximum month average flow of 0.80 MGD.

The goal of the upgrade to class A was the 100 percent reuse of the water and as a result the reopening of closed shellfish beds, improved stream flows in the Dungeness River, and a sustainable water supply for irrigation. Beside the plant upgrades, the marine outfall was extended to 1,320 feet to allow opening of impacted shellfish beds. Shellfish beds of approximately 2800 acres were upgraded to approved status in 1998 due to the many area improvements.

COLLECTION SYSTEM STATUS

Construction of the collection system was begun in the 1930s, and the main trunk to the treatment facility was constructed at that time. Much of the system was constructed later from the 1950s to the mid-1970s; this construction is of concrete pipe. More recent construction is of PVC plastic pipe. The majority of the collection system is gravity sewers.

The system receives significant amounts of infiltration and inflow (I/I) during heavy rainfall. The extraneous flow takes up needed capacity in the collection system and reduces the efficiency of the treatment at the treatment plant. Flow equalization at the treatment facility provides improved treatment of peak flows, but continued improvements to the collection system will be necessary to provide adequate collection and transport capacity in the future.

TREATMENT PROCESSES

The headworks contains screening, grit removal, and flow measurement. After the headworks, there is a selector and then an oxidation ditch. Excess flow can be sent to the equalization basin. From the oxidation ditch, the wastewater flows to the secondary clarifiers. The clarifier effluent is coagulated and then filtered through gravity feed anthracite media filters and then disinfected with an ultraviolet (UV) system. A retention pond holds the effluent in the event of a process failure. The pond is designed to hold the equivalent of four days average flow.

On-line process monitors provide continuous monitoring of flow, turbidity and other important parameters. The reclamation facility also includes alarms to automatically divert substandard flows and notify operators. The holding pond has a recycle pump to return substandard flows for treatment. Only reclaimed water meeting Class A standards, which is no longer considered wastewater, is discharged from the facility.

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DISCHARGE OUTFALL

Tertiary treated and disinfected effluent is discharged from the facility to the marine outfall (001) that is approximately 1,320 feet offshore in about 50 feet of water. The diffuser is 200 feet in length with 16 ports of 4-inch diameter. The use of this outfall will be limited to emergency and maintenance discharges in the future. The stream flow augmentation site for Bell Creek (Outfall 002) is at the Reuse Demonstration Site at Carrie Blake Park. From the cascade aeration at the demonstration site, the flow passes through the water quality pond, a vegetated channel, and a re-aeration manhole before reaching Bell Creek through a side-bank chute. The outfall is into a pond along Bell Creek. Much of the reclaimed water is reused and does not pass through either outfall.

RESIDUAL SOLIDS

The treatment facilities remove solids during the treatment of the wastewater at the headworks (grit and screenings), and secondary clarifiers, in addition to incidental solids (rags, scum, and other debris) removed as part of the routine maintenance of the equipment. Grit, rags, scum, and screenings are drained and disposed of as solid waste at the local transfer station.

Biosolids removed from the clarifiers are treated to Class A biosolids standards. Sludge from the digesters is mixed with lime and then polymer is added. The sludge passes through a rotary screen thickener then a heated screw press. The output is dry class A biosolids that has many uses.

PERMIT STATUS

The previous permit for this facility was issued on March 4, 1998. The previous permit placed effluent limitations on 5-day Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), pH, Total Coliform Bacteria, Turbidity, Ammonia, and Dissolved Oxygen.

An application for permit renewal was submitted to the Department on July 19, 2002, and accepted by the Department on August 15, 2002.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility received its last inspection on October 11, 2004. A final construction inspection was completed on June 16, 1999.

During the history of the previous permit, the Permittee has remained in compliance, based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the NPDES application and in discharge monitoring reports. The effluent is characterized as follows:

Table 1: Wastewater Characterization

<u>Parameter</u>	<u>Concentration</u>
pH	6.9-7.4
Flow Rate	0.53 mgd
Temperature	10.4-19.8 °C
Biochemical Oxygen Demand (BOD ₅)	2.5 mg/l
Total Coliform	0.15 col/100 ml
Total Suspended Solids (TSS)	2.0 mg/l

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Ammonia	0.51 mg/l
Dissolved Oxygen	10.2 mg/l
Total Kjeldahl Nitrogen (TKN)	1.6 mg/l
Nitrate	2.5 mg/l
Total Phosphorus	1.8 mg/l
Ortho Phosphorus	1.3 mg/l

The wastewater characterization shows a well treated effluent. The conventional pollutants average low levels in the effluent. There are no toxic pollutants at levels of concern.

PROPOSED PERMIT LIMITATIONS

Federal and state regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations for municipal discharges are set by regulation (40 CFR 133, and Chapters 173-220 and 173-221 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992.) The most stringent of these types of limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the state of Washington were determined and included in this permit. The Department does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

DESIGN CRITERIA

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria.

The design criteria for this treatment facility are taken from the City of Sequim Comprehensive Wastewater Facilities Plan, August 1992, and the Wastewater Facilities Plan Amendment, September 1995, and are as follows:

Table 2: Design Standards for City of Sequim WWTP.

Parameter	Design Quantity
Monthly average flow (max. month)	0.80 MGD
Instantaneous peak flow	1.8 mgd
BOD ₅ influent loading	1725 lbs/day
TSS influent loading	1450 lbs/day

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TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Municipal wastewater treatment plants are a category of discharger for which technology-based effluent limits have been promulgated by federal and state regulations. These effluent limitations are given in the Code of Federal Regulations (CFR) 40 CFR Part 133 (federal) and in Chapter 173-221 WAC (state). These regulations are performance standards that constitute all known available and reasonable methods of prevention, control, and treatment for municipal wastewater.

CONVENTIONAL LIMITS

The following technology-based limits for pH, fecal coliform, BOD₅, and TSS are taken from Chapter 173-221 WAC are:

Table 3: Technology-based Limits.

Parameter	Limit
pH:	shall be within the range of 6 to 9 standard units.
Fecal Coliform Bacteria	Monthly Geometric Mean = 200 organisms/100 mL Weekly Geometric Mean = 400 organisms/100 mL
BOD ₅ (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L
TSS (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L

The following technology-based mass limits are based on WAC 173-220-130(3)(b) and 173-221-030(11)(b).

Monthly effluent mass loadings (lbs/day) were calculated as the maximum monthly design flow (0.8 MGD) x Concentration limit (30 mg/L) x 8.34 (conversion factor) = mass limit 200 lbs/day. The weekly average effluent mass loading is calculated as 1.5 x monthly loading = 300 lbs/day.

CLASS A RECLAIMED WATER LIMITS

The state of Washington passed legislation in 1992 which provided for the development of a process to encourage and implement water reclamation and reuse. In response to this legislation, RCW 90.46, and subsequent amendments, the Department of Health and Ecology developed the Water Reclamation and Reuse Standards, 1997. These standards outline requirements for the level of treatment technology as well as technology-based water quality limits necessary to protect public health in the reuse of reclaimed water. These standards include requirements for four classes of reclaimed water, Classes A, B, C, and D. Class A is the highest quality of reclaimed water, and therefore, provides the broadest range of reuse opportunities. Conversely, Class A reclaimed water requires the most stringent treatment and water quality limitations.

The technology and water quality requirements for the production of Class A reclaimed water, as cited in the Water Reclamation and Reuse Standards, 1997, are as follows:

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Class A Reclaimed Water is reclaimed water that, at a minimum, is at all times an oxidized, coagulated, filtered, disinfected wastewater.

1. Oxidized wastewater is defined as a wastewater in which the organic matter has been stabilized such that the biochemical oxygen demand (BOD₅) does not exceed 30 mg/l and total suspended solids (TSS) do not exceed 30 mg/L, is nonputrescible, and contains dissolved oxygen.
2. Coagulated wastewater is defined as an oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated prior to filtration by the addition of chemicals or by an equally effective method.
3. Filtered wastewater is defined as an oxidized, coagulated wastewater which has been passed through natural undisturbed soils or filter media, such as sand or anthracite, so that the turbidity as determined by an approved laboratory method does not exceed an average operating turbidity of 2 nephelometric turbidity units (NTU), determined monthly, and does not exceed 5 NTU at any time.
4. Adequate disinfection is defined as the median number of total coliform organisms in the wastewater after disinfection does not exceed 2.2 per 100 milliliters, as determined from the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform organisms does not exceed 23 per 100 milliliters in any sample.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the state of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The state was issued 91 numeric water quality criteria for the protection of human health by the U.S. EPA (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

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NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the state of Washington.

ANTIDegradation

The state of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when receiving waters are of higher quality than the criteria assigned, the existing water quality shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to the Strait of Juan de Fuca, which is designated as a Class AA receiving water in the vicinity of the outfall. Besides this marine discharge, the facility also augments the flow of Bell Creek, which is designated as a Class A freshwater stream. Other nearby point source outfalls includes the spray fields for the Sunland Wastewater Treatment plant and the Sequim Bay State Park Wastewater Treatment plant. Significant nearby non-point sources of pollutants include agriculture lands in the area. Characteristic uses include the following:

Class AA (Extraordinary) water supply (domestic, industrial, agricultural); stock watering; fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

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Water quality of this class shall markedly and uniformly exceed the requirements for all or substantially all uses.

Class A (Excellent) water supply (domestic, industrial, agricultural); stock watering; fish migration; fish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for Outfall 001 (marine) discharge are summarized below:

Fecal Coliforms	14 organisms/100 mL maximum geometric mean
Dissolved Oxygen	7 mg/L minimum
Temperature	13.0 degrees Celsius maximum or incremental increases above background
pH	7.0 to 8.5 standard units
Turbidity	less than 5 NTUs above background
Toxics	No toxics in toxic amounts

Criteria for Outfall 002 (freshwater) discharge are summarized below:

Fecal Coliforms	100 organisms/100 mL maximum geometric mean
Dissolved Oxygen	8 mg/L minimum
Temperature	18.0 degrees Celsius maximum or incremental increases above background
pH	6.5 to 8.5 standard units
Turbidity	less than 5 NTUs above background
Toxics	No toxics in toxic amounts

The Strait of Juan de Fuca meets the criteria, while Bell Creek is listed on the last 303(d) list of impaired waterbodies for fecal coliform.

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls which the Department has determined to be AKART. A mixing zone is authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in Chapter 173-201A WAC and are defined as follows:

For Outfall 001 (marine)

Chronic Zone is 260 feet in any horizontal direction from the diffuser.

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Acute Zone is 26 feet in any horizontal direction from the diffuser.

For Outfall 002 (freshwater)

Chronic Zone is 147 feet from the outfall.

Acute Zone is 0 feet from the outfall.

The dilution factors of effluent to receiving water that occur within these zones have been determined at the critical condition by the use of models. The dilution factors have been determined to be:

Outfall 001	Acute	Chronic
Aquatic Life	105	160
Human Health, Carcinogen		160
Human Health, Non-carcinogen		160

Outfall 002	Acute	Chronic
Aquatic Life	1	5
Human Health, Carcinogen		5
Human Health, Non-carcinogen		5

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

The critical conditions for the Strait of Juan de Fuca are a chronic critical condition of the 50th percentile current flow and a plant flow equal to the highest monthly average plant flow, and an acute critical condition of the 10th percentile flow and a plant flow equal to the highest daily maximum plant flow. The critical condition for Bell Creek is the seven day average low creek flow with a recurrence interval of ten years (7Q10). The ambient background data used for this permit includes the following:

Parameter	Value used	
	Outfall 001	Outfall 002
7Q10 low flow	N/A	2.1 mgd
Velocity	0.15 ft/sec	0.2 ft/sec
Depth	50 feet	1 foot
Width	N/A	25 feet

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Temperature	5-15 °C	18 °C
pH (high)	8.4	7.9
Dissolved Oxygen	7.0 mg/L	8.0 mg/l
Total Ammonia-N	0.4 mg/L	0.129 mg/l
Fecal Coliform	0	75/100 ml
Salinity	20-30 g/kg	N/A
Metals	0.0 (below detection limits)	0.0 (below detection limits)

BOD₅--Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, the technology-based effluent limitation for BOD₅ was placed in the permit. Technology-based limitations will be protective of dissolved oxygen criteria in the receiving water.

Temperature--The impact of the discharge on the temperature of the marine receiving water was modeled by simple mixing analysis at critical condition. The receiving water temperature at the critical condition is 13°C and the effluent temperature is 20.3°C. The predicted resultant temperature at the boundary of the chronic mixing zone is 13.0°C and the incremental rise is 0.045°C.

Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, no effluent limitation for temperature was placed in the proposed permit.

pH--Because of the high buffering capacity of marine water, compliance with the technology-based limits of 6 to 9 will assure compliance with the Water Quality Standards for Surface Waters.

Temperature and pH--The impact of pH and temperature on Bell Creek were modeled using the calculations from EPA, 1988. Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, the technology-based effluent limitations for pH were placed in the permit and temperature was not limited.

Fecal coliform--Based on the Class A reclaimed water requirements for total Coliform, there is no predicted violation of the Water Quality Standards for Surface Waters. Also, the technology-based effluent limitation for fecal coliform bacteria which will apply during defined upset conditions is not expected to result in a violation of the Water Quality Standards for Surface Waters.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The following toxics were determined to be present in the discharge: ammonia and heavy metals. A reasonable potential analysis was conducted on these parameters to determine whether or not effluent limitations would be required in this permit.

The determination of the reasonable potential for ammonia and heavy metals to exceed the water quality criteria was evaluated with procedures given in EPA, 1991 at the critical condition.

No valid ambient background data was available for heavy metals. A determination of reasonable potential using zero for background resulted in no reasonable potential.

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Water quality criteria for metals in Chapter 173-201A WAC are based on the dissolved fraction of the metal.

The Permittee may provide data clearly demonstrating the seasonal partitioning of the dissolved metal in the ambient water in relation to an effluent discharge. Metals criteria may be adjusted on a site-specific basis when data is available clearly demonstrating the seasonal partitioning in the ambient water in relation to an effluent discharge.

Metals criteria may also be adjusted using the water effects ratio approach established by USEPA, as generally guided by the procedures in USEPA Water Quality Standards Handbook, December 1983, as supplemented or replaced.

Valid ambient background data was available for ammonia. Calculations using all applicable data resulted in a determination that there is no reasonable potential for this discharge at Outfall 001 to cause a violation of marine water quality standards. This determination assumes that the Permittee meets the other effluent limits of this permit.

Effluent limits for Outfall 002 were derived for ammonia, which was determined to have a reasonable potential to cause a violation of the Water Quality Standards in Bell Creek. Effluent limits were calculated using methods from EPA, 1991.

The resultant effluent limits are as follows:

Ammonia (as N) – 3.3 mg/l Average Monthly, and 5.7 mg/l Daily Maximum

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

Acute toxicity tests measure mortality as the significant response to the toxicity of the effluent. Dischargers who monitor their wastewater with acute toxicity tests are providing an indication of the potential lethal effect of the effluent to organisms in the receiving environment.

Chronic toxicity tests measure various sub lethal toxic responses such as retarded growth or reduced reproduction. Chronic toxicity tests often involve either a complete life cycle test of an organism with an extremely short life cycle or a partial life cycle test on a critical stage of one of a test organism's life cycles. Organism survival is also measured in some chronic toxicity tests.

Accredited WET testing laboratories have the proper WET testing protocols, data requirements, and reporting format. Accredited laboratories are knowledgeable about WET testing and capable of calculating an NOEC, LC₅₀, EC₅₀, IC₂₅, etc. All accredited labs have been provided the most recent version of the Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* which is referenced in the permit. Any Permittee interested in receiving a copy of this publication may call the Ecology Publications Distribution Center 360-407-7472 for a copy. The Department recommends that Permittees send a copy of the acute or chronic toxicity sections(s) of their permits to their laboratory of choice.

The WET tests during effluent characterization indicate that no reasonable potential exists to cause receiving water acute toxicity, and the Permittee will not be given an acute WET limit and will only be

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required to retest the effluent prior to application for permit renewal in order to demonstrate that acute toxicity has not increased in the effluent.

If the Permittee makes process or material changes which, in the Department's opinion, results in an increased potential for effluent toxicity, then the Department may require additional effluent characterization in a regulatory order, by permit modification, or in the permit renewal. Toxicity is assumed to have increased if WET testing conducted for submission with a permit application fails to meet the performance standards in WAC 173-205-020, "whole effluent toxicity performance standard." The Permittee may demonstrate to the Department that changes have not increased effluent toxicity by performing additional WET testing after the time the process or material changes have been made.

The WET tests during effluent characterization indicate that no reasonable potential exists to cause receiving water chronic toxicity, and the Permittee will not be given a chronic WET limit and will only be required to retest the effluent prior to application for permit renewal in order to demonstrate that chronic toxicity has not increased in the effluent.

If the Permittee makes process or material changes which, in the Department's opinion, results in an increased potential for effluent toxicity, then the Department may require additional effluent characterization in a regulatory order, by permit modification, or in the permit renewal. Toxicity is assumed to have increased if WET testing conducted for submission with a permit application fails to meet the performance standards in WAC 173-205-020, "whole effluent toxicity performance standard." The Permittee may demonstrate to the Department that changes have not increased effluent toxicity by performing additional WET testing after the time the process or material changes have been made.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge is unlikely to contain chemicals regulated for human health, and does not contain chemicals of concern based on existing data or knowledge. The discharge will be re-evaluated for impacts to human health at the next permit reissuance.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

The Department believes the Permittee's reuse of class A reclaimed water has no potential to cause a violation of the Ground Water Quality Standards and therefore no limitations are required based on potential effects to ground water.

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*COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED MARCH 4, 1998, AS
MODIFIED ON DECEMBER 4, 2001*

Existing Limits	Proposed Limits
BOD ₅ Monthly Average 30 mg/l, 200 lbs/day	BOD ₅ Monthly Average 30 mg/l, 200 lbs/day
N/A	BOD ₅ Weekly Average 45 mg/l, 300 lbs/day
TSS Monthly Average 30 mg/l, 200 lbs/day	TSS Monthly Average 30 mg/l, 200 lbs/day
N/A	TSS Weekly Average 45 mg/l, 300 lbs/day
Turbidity Monthly Average 2 NTU	Turbidity Monthly Average 2 NTU
Turbidity Sample Maximum 5 NTU	Turbidity Sample Maximum 5 NTU
Total Coliform Bacteria 7 Day Median 2.2 MPN/100 ml	Total Coliform Bacteria 7 Day Median 2.2 MPN/100 ml
Total Coliform Bacteria Sample Maximum 23 MPN/100 ml	Total Coliform Bacteria Sample Maximum 23 MPN/100 ml
Ammonia (as N) Monthly Average 3.3 mg/l	Ammonia (as N) Monthly Average 3.3 mg/l
Ammonia (as N) Daily Maximum 5.7 mg/l	Ammonia (as N) Daily Maximum 5.7 mg/l
N/A	Total Nitrogen (as N) 10 mg/l
pH shall not be outside the range 6.0 to 9.0	pH daily minimum is equal to or greater than 6 and the daily maximum is less than or equal to 9
Dissolved Oxygen present	Dissolved Oxygen shall be measurably present in secondary effluent at all times
N/A	Total Flow Monthly Average 0.80 MGD

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved. Other monitoring is required to further characterize the effluent.

Monitoring of sludge quantity and quality is necessary to determine the appropriate uses of the sludge. Sludge monitoring is required by the current state and local solid waste management program and also by EPA under 40 CFR 503.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The required monitoring frequency is consistent with agency guidance given in the current version of the Department's *Permit Writer's Manual* (July 1994) for water reclamation plants.

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Additional monitoring is required in order to further characterize the effluent. These monitored pollutants could have a significant impact on the quality of the surface water.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. The laboratory at this facility is accredited (M1427) for: Ammonia, BOD/CBOD, Total Chlorine Residual, DO, pH, TSS, Turbidity, Fecal Coliform, and Total Coliforms.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

PREVENTION OF FACILITY OVERLOADING

Overloading of the treatment plant is a violation of the terms and conditions of the permit. To prevent this from occurring, RCW 90.48.110 and WAC 173-220-150 require the Permittee to take the actions detailed in proposed permit requirement S.4 to plan expansions or modifications before existing capacity is reached and to report and correct conditions that could result in new or increased discharges of pollutants. Condition S.4 restricts the amount of flow.

OPERATION AND MAINTENANCE (O&M)

The proposed permit contains Condition S.5 as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water quality problems the Permittee is required in permit Condition S7 to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503, and by Ecology under Chapter 70.95J RCW and Chapter 173-308 WAC. The disposal of other solid waste is under the jurisdiction of the Clallam County Health Department.

PRETREATMENT

An industrial user survey may be required to determine the extent of compliance of all industrial users of the sanitary sewer and wastewater treatment facility with federal pretreatment regulations (40 CFR Part 403 and Sections 307(b) and 308 of the Clean Water Act), with state regulations (Chapter 90.48 RCW and Chapter 173-216 WAC), and with local ordinances.

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Federal and State Pretreatment Program Requirements

Under the terms of the addendum to the "Memorandum of Understanding between Washington Department of Ecology and the United States Environmental Protection Agency, Region 10" (1986), the Department has been delegated authority to administer the Pretreatment Program [i.e. act as the Approval Authority for oversight of delegated Publicly Owned Treatment Works (POTWs)]. Under this delegation of authority, the Department has exercised the option of issuing wastewater discharge permits for significant industrial users discharging to POTWs which have not been delegated authority to issue wastewater discharge permits.

There are a number of functions required by the Pretreatment Program which the Department is delegating to such POTWs because they are in a better position to implement the requirements (e.g. tracking the number and general nature of industrial dischargers to the sewerage system). The requirements for a Pretreatment Program are contained in Title 40, Part 403 of the Code of Federal Regulations. Under the requirements of the Pretreatment Program [40 CFR 403.8(f)(1)(iii)], the Department is required to approve, condition, or deny new discharges or a significant increase in the discharge for existing significant industrial users (SIUs) [40 CFR 403.8 (f)(1)(i)].

The Department is responsible for issuing state waste discharge permits to SIUs and other industrial users of the Permittee's sewer system. Industrial dischargers must obtain these permits from the Department prior to the Permittee accepting the discharge [WAC 173-216-110(5)] (Industries discharging wastewater that is similar in character to domestic wastewater are not required to obtain a permit. Such dischargers should contact the Department to determine if a permit is required.). Industrial dischargers need to apply for a state waste discharge permit 60 days prior to commencing discharge. The conditions contained in the permits will include any applicable conditions for categorical discharges, loading limitations included in contracts with the POTW, and other conditions necessary to assure compliance with State water quality standards and biosolids standards.

The Department requires this POTW to fulfill some of the functions required for the Pretreatment Program in the NPDES permit (e.g. tracking the number and general nature of industrial dischargers to the sewage system). The POTW's NPDES permit will require that all SIUs currently discharging to the POTW be identified and notified of the requirement to apply for a wastewater discharge permit from the Department. None of the obligations imposed on the POTW relieve an industrial or commercial discharger of its primary responsibility for obtaining a wastewater discharge permit (if required), including submittal of engineering reports prior to construction or modification of facilities [40 CFR 403.12(j) and WAC 173-216-070 and WAC 173-240-110, et seq.].

Wastewater Permit Required

RCW 90.48 and WAC 173-216-040 require SIUs to obtain a permit prior to discharge of industrial waste to the Permittee's sewerage system. This provision prohibits the POTW from accepting industrial wastewater from any such dischargers without authorization from the Department.

Requirements for Routine Identification and Reporting of Industrial Users

The NPDES permit requires non-delegated POTWs to "take continuous, routine measures to identify all existing, new, and proposed SIUs and potential significant industrial users (PSIUs) discharging to the Permittee's sewerage system." Examples of such routine measures include regular review of business tax licenses for existing businesses and review of water billing records and existing connection authorization records. System maintenance personnel can also be diligent during performance of their jobs in identifying and reporting as-yet unidentified industrial dischargers. Local newspapers, telephone directories, and word-of-mouth can also be important sources of information regarding new or existing

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discharges. The POTW is required to notify an industrial discharger, in writing, of their responsibilities regarding application for a state waste discharge permit and to send a copy of the written notification to the Department. The Department will then take steps to solicit a state waste discharge permit application.

Annual Submittal of List of Industrial Users

This provision requires the POTW to submit annually a list of existing and proposed SIUs and PSIUs. This requirement is intended to update the Department on an annual basis of the status of industrial users in the POTW's service area, without requiring the POTW to go through the process of performing a formal Industrial User Survey. This provision is normally applied to POTWs not serving industrial or commercial users. Although this permit does not require performance of an Industrial User Survey, the Permittee is nevertheless required under the previous section, to take adequate continuous routine measures to identify existing and new industrial discharges.

Duty to Enforce Discharge Prohibitions

This provision prohibits the POTW from authorizing or permitting an industrial discharger to discharge certain types of waste into the sanitary sewer. The first portion of the provision prohibits acceptance of pollutants which cause pass through or interference. The definitions of pass through and interference are in Appendix B of the fact sheet.

The second portion of this provision prohibits the POTW from accepting certain specific types of wastes, namely those which are explosive, flammable, excessively acidic, basic, otherwise corrosive, or obstructive to the system. In addition wastes with excessive BOD, petroleum based oils, or which result in toxic gases are prohibited to be discharged. The regulatory basis for these prohibitions is 40 CFR Part 403, with the exception of the pH provisions which are based on WAC 173-216-060.

The third portion of this provision prohibits certain types of discharges unless the POTW receives prior authorization from the Department. The discharges include cooling water in significant volumes, stormwater and other direct inflow sources, and wastewaters significantly affecting system hydraulic loading, which do not require treatment.

Support by the Department for Developing Partial Pretreatment Program by POTW

The Department has committed to providing technical and legal assistance to the Permittee in fulfilling these joint obligations, in particular assistance with developing an adequate sewer use ordinance, notification procedures, enforcement guidelines, and developing local limits and inspection procedures.

OUTFALL EVALUATION

Proposed permit Condition S.10 requires the Permittee to conduct an outfall inspection and submit a report detailing the findings of that inspection. The purpose of the inspection is to determine the condition of the discharge pipe and diffusers and to determine if sediment is accumulating in the vicinity of the outfall.

RECLAIMED WATER (R) CONDITIONS

The Reclaimed Water Act, Chapter 90.46 RCW, authorized the development of Water Reclamation and Reuse Standards for the beneficial use of reclaimed water. These standards were completed in 1997. All reclaimed water permits issued by the Department must specify conditions demonstrating that the wastewater has been adequately and reliably treated to meet the requirements in the Water Reclamation

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and Reuse Standards, 1997, appropriate for the use. In addition to meeting the water quality limitations, the standards require specific treatment and disinfection requirements beyond those of most conventional wastewater treatment facilities. The standards also require automated alarms, redundancy of treatment units, emergency storage, stringent operator training requirements and public notification of reclaimed water use.

Under the Reclaimed Water Act, RCW 90.46.040, a permit is required for land application of reclaimed water. The permit is issued to the generator of the reclaimed water who may then distribute the water subject to the permitted provisions governing the location, rate, water quality and purposes of use. The permit is issued by the Department under the authority of Chapter 90.48 RCW which requires that a permit be issued before any discharge of pollutants to waters of the state is allowed (RCW 90.48.080 and 90.48.162). RCW 90.46.030 states that the Department of Health may issue a permit for industrial and commercial uses of reclaimed water and that the permits will govern the location, rate, water quality and purposes of use. Per memorandum of agreement between the Departments of Ecology and Health (DOH) requirements are included in a single permit issued by the Department.

In addition to the Water Reclamation and Reuse Standards, regulations adopted by the state include procedures for issuing permits (Chapter 173-216 WAC), technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC) and water quality criteria for ground waters (Chapter 173-200 WAC). The Reclaimed Water Act, the Water Reclamation and Reuse Standards and these regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit.

The Water Reclamation and Reuse Standards require the generator of the reclaimed water to either have an the Department delegated industrial wastewater treatment program or all industries discharging into the generator's wastewater collection system shall have current waste discharge permits issued by the Department.

The Permittee is considered the generator of the reclaimed water and RCW 90.46.120 gives the Permittee exclusive right to any water generated by the wastewater treatment facility. Use and distribution of reclaimed water is exempted from the water right permit requirements of RCW 90.03.250 and 90.44.060.

The Reclaimed Water Act, Chapter 90.46 RCW requires that reclaimed water be adequately and reliably treated prior to distribution and beneficial use. State regulations require that limitations set forth in a permit issued under Chapter 90.48 RCW must be either technology- or water quality-based. Municipal wastewater must also be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the state. The minimum criteria to demonstrate compliance with these requirements are derived from the *Water Reclamation and Reuse Standards* and Chapter 173-221 WAC.

RECLAIMED WATER DISTRIBUTION AND USE (R1)

These permit requirements are based on the Water Reclamation and Reuse Standards authorized in Chapter 90.46 RCW. The standards contain requirements to assure that distribution and use of reclaimed water are protective of public health and the environment at all times. These include prohibitions on bypass, alarms and storage or alternative disposal of substandard water, maintenance of operational records, cross connection control, use area restrictions and enforceable contracts and a local reclaimed water use ordinance.

OPERATIONS AND MAINTENANCE (R2)

The proposed permit contains Condition R.2 as authorized under the Water Reclamation and Reuse Standards and RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It

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is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture, treatment and protection of public health and the environment.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual municipal NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards, Sediment Quality Standards, or Ground Water Standards, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to protect human health, aquatic life, and the beneficial uses of waters of the state of Washington. The Department proposes that this permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.
1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.
1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.
1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.
1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Metcalf and Eddy.

1991. Wastewater Engineering, Treatment, Disposal, and Reuse. Third Edition.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

Laws and Regulations(<http://www.ecy.wa.gov/laws-rules/index.html>)

Permit and Wastewater Related Information
(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109
1997. Water Reclamation and Reuse Standards, Ecology Publication # 97-23.
1998. Criteria for Sewage Works Design, Ecology Publication # 98-37.
1996. Implementation Guidance for the Ground Water Quality Standards, Ecology Publication # 96-02

Water Pollution Control Federation.

1976. Chlorination of Wastewater.

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(E2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on July 13, 2003, and July 20, 2003, and May 16, 2004, and May 23, 2004, in *Peninsula Daily News* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on March 25, 2005, in *Sequim Gazette* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Carey Cholski
Municipal Permit Administrator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775.

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30-day comment period to the address above. The request for a hearing shall indicate the interest of the party and the reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6278, or by writing to the address listed above.

This permit and fact sheet were written by Dave Dougherty

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a pollutant on an organism that occurs within a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of prevention, control, and treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation--The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month (except in the case of fecal coliform). The daily discharge is calculated as the average measurement of the pollutant over the day.

Average Weekly Discharge Limitation--The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The daily discharge is calculated as the average measurement of the pollutant over the day.

Beneficial Use--The use of reclaimed water, that has been transported from the point of production to the point of use without an intervening discharge to the waters of the state, for a beneficial purpose.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

CBOD₅--The quantity of oxygen utilized by a mixed population of microorganisms acting on the nutrients in the sample in an aerobic oxidation for five days at a controlled temperature of 20 degrees Celsius, with an inhibitory agent added to prevent the oxidation of nitrogen compounds. The method for determining CBOD₅ is given in 40 CFR Part 136.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a pollutant on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

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Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Combined Sewer Overflow (CSO)--The event during which excess combined sewage flow caused by inflow is discharged from a combined sewer, rather than conveyed to the sewage treatment plant because either the capacity of the treatment plant or the combined sewer is exceeded.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of four discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring --Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in the Water Reclamation and Reuse Standards, WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over a short period of time as is feasible.

Groundwater Recharge Criteria--The contaminant criteria found in the drinking water quality standards adopted by the state board of health pursuant to chapter 43.20 RCW and the department of health pursuant to chapter 70.119A RCW.

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Industrial User--A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Infiltration and Inflow (I/I)--"Infiltration" means the addition of ground water into a sewer through joints, the sewer pipe material, cracks, and other defects. "Inflow" means the addition of precipitation-caused drainage from roof drains, yard drains, basement drains, street catch basins, etc., into a sewer.

Interference--A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal and;

Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--A volume that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in State regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

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Pass through--A discharge which exits the POTW into waters of the-State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Potential Significant Industrial User--A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day or;
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation Level (QL)--A calculated value five times the MDL (method detection level).

Reclaimed Water--Effluent derived in any part from sewage from a wastewater treatment system that has been adequately and reliably treated, so that as a result of that treatment, it is suitable for a beneficial use or a controlled use that would not otherwise occur and is no longer considered wastewater.

Sample Maximum--No sample shall exceed this value.

Significant Industrial User (SIU)--

- 1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;
- 2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, wetlands, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

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Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Surface Percolation--The controlled application of water to the ground surface for the purpose of replenishing ground water.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria--Coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. A microbiological test is used to detect and enumerate the total coliform group of bacteria in water samples.

Total Suspended Solids (TSS)--Total suspended solids are the particulate materials in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration or mass of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at <http://www.ecy.wa.gov/programs/wq/wastewater/index.html>

APPENDIX D--RESPONSE TO COMMENTS

The following comments were received during the Public Notice of Draft Permit held for NPDES permit WA0022349. The public notice lasted from March 25, 2005, through April 24, 2005. A Public Hearing was not held.

Below is a listing of the comments received during the comment period. Two entities submitted comments, with one of these submitting a request for a Public Hearing along with justification/comments. Each comment is followed by the corresponding response, permit change (or lack of change), and the Department justification of the change (or lack of change).

Comments by Judy Larson, citizen of Sequim

General Comment:

Having reviewed details of draft permit, and with some knowledge about City of Sequim water & waste water usage history, I now place on record this request for a Public Hearing. Justifications for requiring a Public Hearing are summarily listed.

Response:

The Department has considered the request for a public hearing and has decided against it for two reasons: 1) There is insufficient public interest to warrant a hearing; and 2) of the justifications/comments received, most are directed at issues not directly related to this permit. Therefore, no changes to the permit were made due to this comment, and the permit will be issued as proposed.

Justification/Comment #1:

Despite the significant impacts caused by the City's water use as well as its treated water use regarding water quality (AND quantity) issues, City of Sequim has declined to be a signatory for the WRIA 18 plan. While City of Sequim is a recognized major "factor"/actor for fate of eastern portion of this watershed, the jurisdiction has refused to accept responsibilities/ obligations imposed by the plan, yet has clearly been pursuing a course of trying to control more of our area's most valuable resource ("where water is wealth..."). A Public Hearing is needed to provide missing accountability.

Response #1:

The City's involvement in the WRIA 18 plan is not directly related to this permit and this issue does not justify a Public Hearing on this permit. A hearing on this permit would only occur to discuss issues related to this permit, and would not be held to discuss general issues with the City. These other issues have their own process to receive public input. No changes to the permit were made due to this comment.

Justification/Comment #2:

Why doesn't the City have to comply with new metering rule? Does it show a balance sheet of how much water used actually gets delivered & processed by Treatment Plant? What is the

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metering requirement to show volumes of water re-cycled or dumped to outfall & what is effect of Class A fresh water & temperature on outfall environment/eelgrass? Let us know in a Public Hearing.

Response #2:

The reference to the new metering rule is not clear, but appears to refer to a water resource rule that would not apply to this permit. The permit does require the City to monitor the total flow at the reclaimed water treatment plant and the flow to the marine outfall (Outfall 001). The marine outfall has been monitored and no impact to temperature or eelgrass has occurred. No changes to the permit were made due to this comment.

Justification/Comment #3:

Various parties have been on record questioning the adequacy of the City's SEPA review process regarding approval of numerous developments where inaccurate or inadequate assessments have been "accepted" about water usage, hence sewerage. (City of Sequim accepted that a ~185,000 sqft Wal-Mart Retail & Grocery will only use 3400gal/day, yet local Sequim Safeway of ~60,000 sqft uses 9000gal/day and more recent developments with errors can also be cited.)

Response #3:

The City's SEPA review process and water usage is not related to this permit. This permit does limit the amount of flow the reclaimed water treatment plant can handle. The permit requires the City to complete planning when they reach 85 percent of the capacity of the treatment plant. If the City allows developments to connect to the sewer that increase the flow to over 85 percent of the capacity of the plant, then the City will have to complete wastewater planning. No changes to the permit were made due to this comment.

Justification/Comment #4:

City's accepted stormwater provisions have also been questionable (and indeed, appealed in Court proceedings). The problem with not having the City provide the burden of proof in a Public Hearing is that errors impacting environment and public health may otherwise be too difficult to change due to a City's jurisdictional standing and "presumption of validity."

Response #4:

This permit is not related to stormwater. No changes to the permit were made due to this comment.

Justification/Comment #5:

It is not clear that the City has taken an active enforcement role regarding sewerage maintenance or stormwater maintenance; yet large portions of the Sequim area have Critical Aquifer Recharge Area (CARA) attributes. There have been instances where City has had knowledge of damaged infrastructure, but neither reported this or immediately corrected the problem(s).

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Response #5:

This permit is not related to stormwater maintenance. The permit does require proper operation and maintenance of the sewage facilities. Spills should be immediately reported and controlled, per the permit. The reference to damaged infrastructure is not clear, but if a sewage spill is discovered, it should be reported to the Department spill line at (360) 407-6300. No changes to the permit were made due to this comment.

Justification/Comment #6:

Regarding "other permit conditions," how protective is a Pretreatment survey form versus actual periodic/unannounced sampling to verify that what gets delivered can be acceptably treated to Class A?

Response #6:

The pretreatment section of the permit (S6) contains the protections needed to verify the waste can be acceptably treated. This permit section contains industrial permit requirements, discharge prohibitions, and priority pollutant monitoring. The required monitoring in the permit will verify the treated water meets Class A standards. No changes to the permit were made due to this comment.

Justification/Comment #7:

Since the Census shows Sequim has ~ 45 percent of its population 55 and older, the Cryptosporidium risks would have greater impact for a more vulnerable populace and therefore, additional testing &/or treatment may be justified. Let us have this discussed in Public Hearing.

Response #7:

The plant already meets Class A standards which include more testing and advanced treatment as compared to other plants. Cryptosporidium risks would be more appropriate to discuss on the water side, rather than with a wastewater permit. No changes to the permit were made due to this comment.

Justification/Comment #8:

Is there adequate testing for Xenobiotics, by-product &/or residual pharmaceuticals, various endocrine disrupting agents - especially if the Permit would allow for augmenting any historic salmonid streams (Bell Creek)? The data or lack of data can be revealed in Public Hearing.

Response #8:

The permit does not require such testing, but the Department did recently finish a study on pharmaceuticals in the Sequim area wastewaters. The study can be found at <http://www.ecy.wa.gov/biblio/0403051.html>. The study determined that additional monitoring for pharmaceuticals appears to be a low priority in connection with the Sequim wastewater treatment plant. No changes to the permit were made due to this comment.

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Justification/Comment #9:

Questions also exist about residual wastes associated with Class A treatment (besides endocrine disruptors, Rx by-products pharmaceuticals). What about heavy metal content of solids which City had proposed to mix with yard wastes (residual herbicides, etc). Who tests this final product before it gets distributed in City parks/ flower beds -many of which are CARA locations? We would have this information presented in a Public Hearing.

Response #9:

This permit does not regulate the use of Class A biosolids produced at the plant. A separate biosolids permit covers that. No changes to the permit were made due to this comment.

Justification/Comment #10:

Where does the Class A water get distributed? Will there be returns to areas from which major source of water is drawn? Why can Sequim still draw from the Dungeness River infiltration bed - even during critical salmonid spawning months? Those of us on shallow wells and with interests in restoring "stocks" to our river and watershed deserve an accounting in a Public Hearing.

Response #10:

This permit regulates the standards the Class A water must meet and the approved uses. The City, as the generator of the Class A water is the owner of the water per RCW 90.46 and can distribute and use the water as it wishes, as long as the standards are met. This permit does not regulate water resource issues. No changes to the permit were made due to this comment.

Comments by Andy Brastad, R.S. and Cathy Lear of the Clallam County Environmental Health Division and the Department of Community Development Habitat Biologist

Comment #1:

Section S3, Reporting – Shellfish. As the local contact for providing the public information on safe recreational shellfish harvesting, Clallam County Environmental Health Division should be included as an agency to immediately notify along with Department of Health and Department of Ecology in the event of an unauthorized discharge. Our contact phone number is (360) 417-2258.

Response #1:

The Department agrees that the local public officials should be notified, so we therefore added the requirement to the permit. Condition S3.F was changed to:

Unauthorized discharges such as collection system overflows, plant bypasses, or failure of the disinfection system, shall be reported immediately to the Department of Ecology, the Department of Health, Shellfish Program, and the Clallam County Environmental Health Division. The Department of Ecology's Southwest Regional Office 24-hour number is (360) 407-6300, the Department of Health's Shellfish 24-hour number is (360) 236-3330, and the Clallam County Environmental Health Division number is (360) 417-2258.

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Comment #2:

Nitrogen loading in ground, surface, and marine waters is being recognized as a source of environmental problems. In eastern Clallam County there is documentation of elevated nitrates in ground water. Oxygen deficiencies in Hood Canal are, in part, due to nitrogen loading from anthropogenic sources. Links between increasing nitrogen availability in near shore marine areas and an increase in olvid mats are being made. The Departments of Health and Ecology should consider reducing the current allowable reclaimed water standard for Total Nitrogen of 10 mg/L for to a lower allowable level.

Response #2:

The Department agrees that nitrogen is a potential source of environmental problems. The previous permit for Sequim did not include a limit for Total Nitrogen, as the Water Reclamation and Reuse Standards, 1997 do not include any standards for Total Nitrogen for irrigation uses. The 10 mg/L Nitrogen limit is new in this permit, and is based on groundwater and drinking water standards. While the comment seems to indicate that in general the limit should be lower for all discharges, the Department has determined that the limit should be adequate for this permit and discharge. The limit will protect ground water since the only reclaimed water that reaches ground water is from irrigation at agronomic rates. With the mixing at the surface water outfalls, the surface water is not being degraded. No changes to the permit were made due to this comment.

Comment #3:

Water temperature should be monitored, especially during low flow periods when stream temperatures have the potential to exceed temperatures suitable for aquatic life. Water temperature should not exceed Department of Ecology criteria for streams.

Response #3:

The permit does require the reclaimed water temperature to be monitored and the Department has determined that the flow augmentation to Bell Creek should not have an adverse impact on stream temperature based on previously collected data. During low flow periods the flow augmentation should help keep the flow moving through the ornamental ponds at Carrie Blake Park. While the permit does not require temperature monitoring in Bell Creek, the flow augmentation should not be a contributor to a problem. No changes to the permit were made due to this comment.